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## ABSTRACT

This research investigated the application of Total Quality Management (TQM) in the Information Technology Office (IT) of the University of Louisville since fall 1992. The study includes a detailed literature review of the relationship between TQM and higher education institutions. It is a qualitative analysis, involving a research methodology of interviews (with the Assistant Vice President of IT and two Quality Council Team members), document analyses, and participant observation at a Quality Council meeting. The results show that TQM is making a difference in the management style of IT, and in this sense, in the University of Louisville and higher education institutions as a whole. TQM has helped in flattening the organization of IT, establishing feedback processes, and trying to improve services to customers continuously. For the implementation process, TQM requires clear objectives, strategies, and actions, as well as the understanding of the difficulties that come from a style of management that differs in many ways from the traditional style of managing. TQM is a tool of administration that has a future in institutions of higher learning. (Contains 19 references.) (Author/SLD)

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## Total Quality Management in Higher Education: Lessons Learned from an Information

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## Abstract

This research investigates the application of Total Quality Management (TQM) in the Information Technology Office (IT) of the University of Louisville since Fall of 1992. This study has a detailed literature review of the relationship between TQM and higher education institutions. It is a qualitative analysis, involving a research methodology of interviews, document analyses, and participant observation. The results show that TQM is making a difference in the management style of IT, and in this sense, in the University of Louisville and higher education institutions as a whole. TQM has helped in flattening the organization of IT, establishing a Quality Council team, training the managers and staff in team-work, establishing feedback processes, and, trying to continuously improve the services to their customers. For the implementation process, TQM requires clear objectives, strategies, and actions; besides, the understanding of the difficulties that come from a style of management different in many ways from the traditional style of managing. TQM is a tool of administration that has future in institutions of higher learning.

## **Introduction**

Education in the United States has been facing crises on multiple fronts. Examples of these are the long-standing nationwide concern over the quality of education, budgetary restrictions in every region of the country, and increasingly strident calls from stakeholders of educational institutions to document their worth (Heverly and Cornesky, 1992). In some ways, higher education is at a crossroads: spiraling costs, doubts about quality, and eroding public confidence mean that higher education cannot continue as it is (Teeter and Lozier, 1991).

Problems in American higher education can be directly attributed to the lack of vision, insight, and skill of many administrators who lack any formal, even informal, management training. During the rapid growth of higher education in the 1960s and 1970s, unskilled or inefficient managers set the stage for long-term problems. The administrative problems are planning and development, budget management, personnel administration, and the perceived decline in quality among university graduates. The trouble with higher education is not with the preparation, ability, and commitment of its professors. Rather, the trouble is more directly attributable to the lack of administrative leadership (Cornesky, McCool, Byrnes and Weber, 1992).

## **TQM as a possible solution**

Cornesky, McCool, Byrnes and Weber (1992) stated that administrators can effect meaningful change over the next several decades by instituting a total quality management (TQM) philosophy. Ewell (1993) believes that TQM contains new insights

about how we can and should operate in higher education. Also, these insights seem tailored to the times.

A growing number of institutions in higher education are investing in the transformation of traditional management practices (Taylorism) into a new style of leadership known as TQM (Lembcke, 1994). Educational institutions are embracing TQM for the same reasons that led industry and government to embrace it: existing management systems are outmoded and can no longer ensure success in an increasingly competitive world.

It is clear in most higher education environments that the improvements needed in campus life will not occur through increased funding. What is needed are innovative ways of using resources that we already have in ways that allow us to do a better job. This will require new management paradigms, new ways of organizing the work of the campus and its functioning. Total quality provides a framework within which we can develop these new ways of working and living together (Tuttle, 1994).

Before we go any further, let us define TQM. TQM is a philosophy and set of tools that enable an organization to pursue systematically a definition of quality and a means to attaining quality (Seymour, 1993). TQM encourages broad staff participation in problem solving, use of new tools and techniques for process improvement, and relentless focus on meeting or exceeding customer needs (Lembcke, 1994).

TQM is a customer-focused approach that demands that we know exactly whom we are serving and why. Further, TQM's principles asks us to change as directed by our customers' needs. TQM's philosophy espouses the belief that continual improvement is

possible, that evaluation is necessary, that collaboration is essential, and that focus on a particular mission is critical (Shaw, 1993).

TQM is a philosophy of improving quality by ceaselessly improving the processes that support the mission of an organization. In contrast to the traditional management assumption that quality improvements are associated with increased costs, TQM teaches that continuous process improvement enhances productivity and lowers costs (Heverly and Cornesky, 1992).

TQM has proven its efficiency and effectiveness in the business world. TQM has helped to transform the economy of Japan and is now being adopted by other countries as they face the increasingly competitive world market. During the 1980s, many American businesses turned to TQM as a means of retaining or regaining a competitive position in the market place (Heverly and Cornesky, 1992).

Late in the 1980s, and in the beginning of the 1990s, American higher education institutions started to use this management philosophy widely. Today, there are more than two hundred institutions using TQM, especially in the administrative side of the academic organizations (Lewis & Smith, 1994).

There is a growing evidence that the principles and concepts of TQM have much to offer in higher education. Two of higher education's most prestigious journals, *Educational Record and Change*, have devoted entire issues to the subject ("Special Focus," 1993; "TQM," 1993). *New Directions for Institutional Research* has dedicated three entire volumes for exploring the concepts and principles of TQM (Sherr and Teeter,

1991), the applications of TQM to institutions of higher education (Teeter and Lozier, 1993), and whether it is worth doing (Seymour, 1994).

Ted Marchese (1993) states that TQM has six important principles or ideas that have applicability in higher education: customer focus, continuous improvement, management by fact, bench-marking, people, and organizational structures. Lozier & Teeter (1993) discusses six foundations of TQM for colleges and universities: establishing a mission, creating a vision, improving the process continuously, using systematic analysis, promoting participation, and recognizing the university as a system.

#### The implementation process of TQM

The TQM process has started in different ways in higher learning institutions. Many campuses began using TQM on the administrative side, leaving academic issues for later. In some cases, only one office or division within a campus has begun using TQM (Chaffee and Sherr, 1992).

Lewis and Smith (1994) offers a list of over 200 institutions of higher learning that are reported to be involved in total quality. After studying the environment of higher education, Lewis and Smith stated that total quality management is an opportunity for effectiveness in this kind of institutions.

In 1990, the vice president for finance and administration at Oregon State University (OSU) decided to pilot a Total Quality Management (TQM) initiative in administrative areas of the university. Encouraging early results inspired the university to extend implementation to additional areas. Training played a key role in the

implementation process. The training program at OSU has four major components: introductory training, strategic planning, team training, and special topics (Howard, 1993).

Coate (1991) has studied carefully the application of TQM at Oregon State University. Coate special recommendations for implementation in a University setting are the support from the top, finding a champion, working in teams, breakthrough planning, and try the service side first.

At the University of Illinois at Chicago (UIC), they established four training programs: (1) Basic Concepts of quality improvement, which focuses on the principles and concepts of quality improvement. (2) Leader-Facilitator Training, which reviews the processes and tools used by QI teams. (3) Team Member Training, which establishes meeting ground rules, discusses principles, and helps team members gain a general understanding of QI processes and tools. And (4) Leadership Training, which supplies leaders and facilitators with information about team-building activities and troubleshooting (Winter, 1993).

Quality management principles and quality tools are providing Rio Salado Community College with the framework for collaborative planning and decision making. Two areas of adaptation in management thinking were specially significant: the shift from competition to cooperation and the shift from traditional management to leadership (Thor, 1994).

Lembcke (1994) has studied the transformation from Taylorism to TQM in higher education. The critical step in the transformation of hierarchical and bureaucratic



administrative organizations into high-performing and customer pleasing institution has three parts: clarify customers and understand their needs; clarify organizational purpose; and view administrative tasks called *work* within the context of a network of interdependent work processes designed to meet or exceed customer needs.

The implementation of TQM in colleges and universities is not a simple matter. It requires a significant change in the way these institutions' functions. Change of any kind is difficult, but when it involves organizational behavior and people's dynamics, it represents a significant challenge. A recognition and understanding of the barriers affecting the implementation of TQM are critical (Winter, 1991).

## **Problem**

This study investigates the application of TQM in the Information Technology Office (IT) of the University of Louisville (UofL). Research questions to be addressed include: (a) When and why did they start TQM at IT? (b) Which procedure did they use for the implementation of TQM at IT? (c) What are the results of the application process of TQM in IT? IT has been selected purposively to address the research questions, because it is the office of the UofL that has more experience in the implementation process of TQM. This research about TQM is important because it tries to understand a management style that is being widely discussed and used in many higher education institutions around the world. The problem is relevant to the administrative theory and practice of higher learning institutions. The case study of the IT's Office of the UofL is a practical experience of the implementation process of TQM in the administrative side of an educational institution.

## **Methodology**

This study is a qualitative analysis of the application of TQM at IT, specifically in management, organization, and administration. The purpose of this qualitative research was to develop an understanding of TQM principles and practices at UofL's IT Office. In this study, the qualitative research is understood in the classical sense, that is, typically yielding verbal descriptions, largely derived from interview and observational notes. Besides, the document analysis of the organization was undoubtedly necessary. The type of qualitative research used is the case study. In this type of qualitative research the researcher can interview intensively, focusing on the contemporary phenomena and

studying it in their total context. Also, the research needed to involve multiple data sources. In case studies, researchers use a conceptual framework to understand the data that are collected. It's also used to interpret their findings. In this case, that was one of the purposes with the literature review presented in the introduction.

The data collection procedures used in the case study were document analysis, participant observation, interviews, and tape recordings. The document analyses consisted of IT's documents, especially those concerned with the TQM's initiative. The personal interviews were guided by a common protocol consisting of open-ended questions, and were asked to the main participants in the TQM implementation process. Also, participant observation was done at the Quality Council of IT.

The documents used in the research included the Information Technology Interim Report of 1987-88, Information Resources Plan of 1996-98, an article of Jim Chemsky, Assistant Vice President of IT (Flattening the organization without flattening the people), and an article of Ray Chambers, Assistant Vice President of IT (Status of TQM initiatives). Moreover, the Report of the Board of Overseers Visiting Committee to Information Technology of 1995 has been used.

The interviews were made in order to collect data through direct interaction between the researcher and the individuals that have participated in the implementation process of TQM at IT. The interviews had the advantage of adaptability in order to obtain data of much greater depth. In this sense, the interviews helped to tackle the main variables discovered in the process of the research project: relevance, key factors, methodology of implementation, problems, and perspectives of TQM.

The interviews were with the Assistant Vice President of IT, Mr. Ray Chambers (twice) and two Quality Council Team members (Mr. Russ Riedling and Mrs. Barbara Parker). These members of IT's Office helped to give a better understanding of the research problem from different perspectives. Also, these interviews helped to collect more information about one component of the implementation process of TQM as it is the Quality Council Team. The semi-structured type of interview was chosen. It was not employed a detailed interview guide, but a general plan was seriously prepared before each meeting. The first interview was done after reading all the documents of IT's Office. The objective was to gain a general perspective of the TQM's initiative at IT.

The participant observation was done at the Quality Council meeting. The participant observation was made with a guide that contained elements such as control of participation of the different members, the structure of the meeting (agenda), decision-making processes, roles of the Quality Council Team in the meeting, and the general climate of the reunion.

Finally, the way of organizing the data was logical, but done during the development of the research. The objective was to simply look for an attractive and logical presentation of the information obtained in the research. The final structure of the findings were by objectives, strategies, actions, problems, and results. Before finishing this section, a point of clarification is in order: the scope of the project was placed within the context of a semester time-frame. Moreover, information about IT's customers was not collected.

## Findings

The general structure of the findings will be as follows: (1) IT's mission in the context of the mission of the University of Louisville; (2) TQM implementation process of IT, with its vision, objectives, strategies, and actions; (3) problems and results of TQM's implementation.

### IT's Office mission at the University of Louisville

In the 1987-88 *Interim Report of the Information Technology Office*, it was formulated that the nations grow and prosper by building upon an integrated infrastructure of transportation systems, financial systems, communication pathways, and other vital services. Similarly, universities are dependent on an information infrastructure for their growth, health, and prosperity. In the environment of higher education, technology must advance in meaningful ways the research, teaching, and service of the institution.

While it is still possible to research and teach without modern technology, those schools with integrated information systems will prevail. These educational institutions will attract the best students, faculty and researchers; and they will enjoy greater support from their communities.

In the *Information Resources Plan* (1996-1998), main points are mentioned about the reasons of why the academic programs of high quality should make extensive use of information resources. Also, technology will play an increasingly important role in the delivery of information to support instruction, research, and service. Besides, the use of

appropriate information technology will improve quality and productivity in University activities. Moreover, an information-based society requires integrated information resources including excellent library services and resources, computing services, and other information technologies.

#### TQM implementation process in IT

Information Technology reorganized itself based on a team structure with a focus on Total Quality Management (TQM). TQM principles are the guiding force for the day to day management of Information Technology.

IT dissolved the existing three unit organization and created an entirely new twelve unit organization. Each new unit headed by one director reporting directly to the Vice President. This reduced 3 to 8 layers of management to two. It placed former managers in front line staff positions providing more direct access and service to customers. It was a transition from a traditional hierarchical organization to a more integrated and team driven organization.

The *Vision of IT* is “to achieve the most effective, most productive, most rewarding way of working together to better serve our customers.” *The Three Steps of Service* are (1) Develop a cooperative working relationship with the customers and seek to understand their needs; (2) Assist the customers in meeting their needs. (3) Follow up with the customers to insure their needs have been met.

The *Information Technology BASICS* includes practice of teamwork,

operating in a team environment, striving to understand the needs of the internal and external customers, continuously identify problems and areas for improvement, knowing and using Quality tools and techniques, giving customer problems the highest priority, reacting quickly to correct the problem, follow up with the customer, and empowered to see that a problem is being resolved.

### Objectives, Strategies, and Actions

The *objectives* of the TQM initiative were to respond to increased demand for IT services, reduce staff, flatten the organization and reduce complexity, improve services and customer responsiveness, and position IT staff to be more responsive to change.

The *strategies* were to restructure IT from three to twelve units and train all IT staff in continuous improvement and quality tools and processes. Also, redefine the duties of supervisors and managers (from directing and controlling to coaching and mentoring). Besides, it was necessary to establish Human Resources Task Force established to coordinate IT changes with UofL Human Resource policy. Finally, it had been established feedback processes to measure progress.

The *actions* taken in order to fulfill the objectives and the strategies included training all IT staff in continuous improvement and quality tools and processes. All IT staff have attended Basic Quality Training Lab (BQTL) with training provided through UofL's School of Business. Besides, 77 have attended IT-Team Leadership, Facilitation, and Problem Solving Workshop, and 40 have attended the Kentuckiana Quality Conference.

A redefinition of the duties of supervisors and managers was taken: teams participated in developing unit business plans, and in budget cutting and reallocation plans. A Human Resources Task Force was established to coordinate IT changes with UofL Human Resource policy. Moreover, a uniform performance criteria was established for the leadership team, including team participation, internal and external service orientation, continuous improvement, quality through leadership, and employee satisfaction.

IT established feedback processes to measure progress: survey staff to measure organizational climate, survey customers to measure improvement, and establishing focus groups to identify issues. Also, it established rewards and recognition teams to recognize contributions. Finally, IT established a Quality Council team to guide the effort.

The *mission* of the Information Technology Quality Council is to facilitate the development and institutionalization of IT's continuous quality improvement process infrastructure. Besides, the Quality Council team has to coordinate, with management's approval, the operational unit quality improvement strategies as a shared employee-management trusteeship for planned organizational transformation to a quality minded and customer focused work force.

The *major functions* of the Quality Council are to establish a system of customer feedback and involvement, coordinate the bench-mark process, solicit problems for study and improvement, establish and charge quality improvement teams (QIT's), and coordinate the inclusion of quality improvement goals into unit business plans.



### Difficulties of Implementation and General Results

The *major problems* in the implementation process of TQM in IT have been the lack of top level support, the difficulties to get people bind in the process, the difficulties with managers traditional style, incompatibility with the organization of the university (human resources policies), keeping teams focused at the proper level, keeping communication with stake holders, and keeping people trained in total quality principles and tools.

A key factor for implementing TQM is demonstrating customer focus and empowerment to the employees from the directors and Vice Presidents. The process of changing the culture of an organization is not an easy task, especially if the employees and managers are used to the traditional style of management.

There are structural issues that are in relation with the typical organization of the University. IT had to address job descriptions and criteria for evaluations. They have considered team as well as individual evaluations; a real departure from the traditional approach. They are addressing compensation issues based on team participation and measured quality improvements. Moreover, IT sometimes have problems in the relations with other units and divisions of the university, because of the differences in approach to the work.

The *general results* of TQM implementation in IT are budget cuts managed without loosing people, flattening the organization without flattening the people, redesigned processes, working together in a better way (team work), and team

empowerment. The best indicator of TQM implementation process in IT is the customer satisfaction.

In April 1994 IT's Quality Council recommended to create and distribute a survey to the university community to measure satisfaction with the level and quality of service IT provides. The final survey was published and distributed in January 1995. The survey was distributed to 1016 randomly selected U of L employees representing all campuses, departments and staff levels. The survey results reflected a high level of satisfaction.

Information Technology Office surveys the university community on a regular basis in order to measure the success of existing services and plan for future services designed to meet the university's needs. Information gathered from this surveys is used to refine and focus future surveys. The survey also provides opportunities to take specific actions to improve Information Technology's services, including the development in IT of a customer satisfaction strategy.

IT's experience is that TQM is about little steps. It is not a revolution overnight. It's a gradual change within an organization that financially means costs of training, educating and reeducating administrators and staff. Nevertheless, at the same time, the work is done in a better way, and the continuous improvement idea is in everybody's mind.

Information Technology Office is evolving into a stronger team-based organization, with team planning, problem solving, revising processes, and evaluating customer satisfaction through surveys. IT is training their workers in order to delight the customers and to support the strategically important activities of the University (mission).

Information Technology Office is not believing in unreasonable customer expectations. They are starting to listen to their customers frequently, to do what they want them to do, and expressing gratitude for their inputs. They are sure that, if customers do not find the service in IT, they will go somewhere else.

The Overseers Committee (1995) recommended Customer Intimacy. The customer intimacy model builds upon TQM. At IT, they believe that TQM is a natural step to customer intimacy. IT is looking forward to delighting and anticipating the needs of the customers, and the specialization with the biggest customers.

### **Discussion**

TQM means a major change from the traditional style of management. It is a participative style of management that establishes a different relationship between the manager and employee. The manager becomes a facilitator of the team work, inspiring a continuous process of improvement of quality. Moreover, the two-way communication is greatly emphasized.

TQM creates a leaner and less hierarchical structure. Nevertheless, it demands from the employee creativity, responsibility, and serious participation in an environment of collaboration. In order to deal with this changes in the mentality of the major actors (leaders and staff), a continuous training is required in the long process of implementation. The importance of training has to be recognized, because it means financial costs and time-consuming efforts from the institutions.

A customer orientation plays a major role in TQM's framework. The customer (internal and external) has to be identified. The customer needs and wants must be identified. TQM is about believing that there is always a better way of doing the service of the institution. Also, TQM requires communication skills, constant feedback processes, and training in quality tools and techniques. Most of all, TQM requires a deep motivation to do not only what is better, but what is best.

The implementation process seems to be better if it is gradual. It requires the establishment of an environment of teamwork. It cannot be legislated, because this would be at the end the traditional autocratic style of management with new contents. Besides, it does not mean necessarily a sudden re-organization process in the institution.

In the implementation process of TQM is important to redefine the traditional personnel policies of the organization. The performance appraisal has been designed for individuals, not for teams. TQM means to transform the personnel evaluation from competitiveness standards to collaborative criteria. It is problematic because it faces not only the organizational culture, but the whole society culture.

Another important point in the implementation process of TQM is that it requires a strong leadership and commitment at the top level of the organization. TQM requires visionary leadership that will facilitate the cultural change toward continuous quality improvement. This means, a leadership with new educational formation, modeling with examples, and never satisfied with the service of the organization.

A structure like the Quality Council can play a key role in the process of implementation of TQM. The Quality Council Team can be the catalyst of the cultural

change of the organization. The Quality Council Team role is to become the organizational agents of change.

The problems of higher education institutions are diverse. We must not forget that TQM is a tool. TQM is only a possible avenue. Teamwork is not for everybody and not for all type of units within the academic institution. TQM's implementation is unique to each educational institution.

Nevertheless, TQM is an important tool of management for higher education institutions in times of scarcity of resources, competitiveness, and unpredictability. TQM is like an applied marketing and an evolutionary strategy of systematically serving customers with quality of service.

The best people of the organizations seem to be attracted and better maintained when the institutions are structured around work-teams and with a philosophy of continuous improvement of quality. Employees want to be respected, participate in the decision making, and empowered.

TQM requires time, effort, and willingness to change. It involves up-front investment (training). Nevertheless, in the long run it gives substantial results to the organization in the improvement of the quality of educational services.

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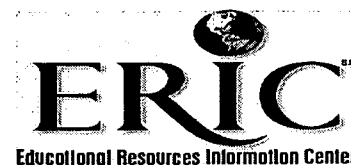
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